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U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEATTORNEY'S DOCKET NUMBER  
07703-268001**TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. 371**

U.S. APPLICATION NO. (IF KNOWN)

**09 / 463929**INTERNATIONAL APPLICATION NO  
PCT/IB98/01323INTERNATIONAL FILING DATE  
August 4, 1998PRIORITY DATE CLAIMED  
August 4, 1997TITLE OF INVENTION  
**METHOD AND APPARATUS FOR PERFORMING TRANSACTIONS**APPLICANT(S) FOR DO/EO/US  
Dave McLaughlin and Carl Alexander Phillips

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
  - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ has been transmitted by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(2)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
  - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☒ have not been made and will not be made.
8. ☐ A translation of amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other documents or information included:

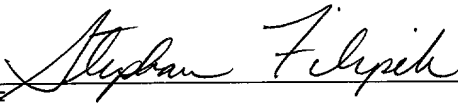
11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.  
☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:
  - ☒ International Preliminary Examination Report
  - ☐
  - ☐
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**EE647 186701 US**

Date of Deposit

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I hereby certify under 37 CFR 1.10 that this correspondence is being deposited with the United States Postal Service as "Express Mail Post Office To Addressee" with sufficient postage on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.Valentin Figueroa  
VALENTIN FIGUEROA

U.S. APPLICATION NO. (IF KNOWN) <b>09/7463929</b>		INTERNATIONAL APPLICATION NO. PCT/IB98/01323		ATTORNEY'S DOCKET NUMBER 07703-268001	
17. <input checked="" type="checkbox"/> The following fees are submitted:				CALCULATIONS	PTO USE ONLY
Basic National Fee (37 CFR 1.492(a)(1)-(5)):					
Search report has been prepared by the EPO or JPO ..... \$840				\$0.00	
International preliminary examination fee paid to USPTO (37 CFR 1.482) .. \$670				\$0.00	
No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2))... \$690				\$0.00	
Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... \$970				\$0.00	
International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2) to (4) ..... \$96				\$0.00	
ENTER APPROPRIATE BASIC FEE AMOUNT				\$970.00	
Surcharge of \$130 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 mos. from the earliest claimed priority date (37 CFR 1.492(e)).				\$0.00	
Claims	Number Filed	Number Extra	Rate		
Total Claims	11 - 20	0	x \$18	\$0.00	
Independent Claims	4 - 3	1	x \$78	\$78.00	
Multiple Dependent Claims(s) (if applicable)			+ \$260	\$0.00	
TOTAL OF ABOVE CALCULATIONS				\$1,048.00	
Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28.)				\$0.00	
SUBTOTAL				\$0.00	
Processing fee of \$130 for furnishing the English Translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 mos. from the earliest claimed priority date (37 CFR 1.492(f))				\$0.00	
TOTAL NATIONAL FEE				\$0.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31).				\$40.00	
TOTAL FEES ENCLOSED				\$1088.00	
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NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO:					
Stephan J. Filipek FISH & RICHARDSON P.C. 45 Rockefeller Plaza, Suite 2800 New York, NY 10111 (212) 765-5070 phone (212) 258-2291 facsimile			 SIGNATURE Stephan J. Filipek NAME 33,384 REGISTRATION NUMBER		

09/463929

420 Rec'd PCT/PTO 01 FEB 2000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : McLaughlin et al.                      Art Unit : Unknown  
 Serial No. :    Examiner : Unknown  
 Filed : February 1, 2000  
 Title : METHOD AND APPARATUS FOR PERFORMING TRANSACTIONS

Assistant Commissioner for Patents  
 Washington, D.C. 20231

PRELIMINARY AMENDMENT

Prior to examination, please amend the application as follows:

In the Claims:

Claim 4, line 1, cancel "any preceding claim" and insert --claim 1--.  
 Claim 5, line 1, cancel "any preceding claim" and insert --claim 1--.  
 Claim 7, line 1, cancel "or 6".  
 Claim 8, line 1, cancel "6 or 7,".

REMARKS

Applicant submits that all of the claims are now in condition for examination, which action is requested. Please apply any other charges or credits to Deposit Account No. 06-1050.

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Signature

*Valentin Figueroa*  
*Valentin Figueroa*

Typed or Printed Name of Person Signing Certificate

Attorney's Docket No.: 07703-268001 / MEK-180/J.25237

Date: 1 FEBRUARY 2000

  
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30007777 doc

09 / 463929

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APPLICATION  
FOR  
UNITED STATES LETTERS PATENT

TITLE: METHOD AND APPARATUS FOR PERFORMING  
TRANSACTIONS

APPLICANT: DAVE MCCLAUGHLIN AND CARL ALEXANDER  
PHILLIPS

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VALENTIN FIGUEROA

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METHOD AND APPARATUS FOR PERFORMING TRANSACTIONS

5 This invention relates to a method and apparatus for performing a transaction. It is particularly, but not exclusively, applicable to machines for vending products or services, such as beverage dispensers, food dispensers, payphones, gaming machines, etc. It is, however, also applicable to other machines such as currency dispensers, and machines simply for accepting payment, such as at a terminal in a shop.

10 It has been proposed that such machines should accept payment by means of "smart cards". i.e. payment tokens, generally credit-card shaped and sized, containing a memory and usually a microprocessor, which are machine-readable. It has also been proposed that certain types of such cards should store a credit value, which can be replenished in exchange for the owner  
15 making a payment, and which is diminished in accordance with the value of a product or service received by the owner. The present invention relates to such cards. The term "card" will be used herein, but it is to be noted that this is intended to cover memory-containing tokens which need not be credit-card shaped and sized.

20 For convenience, all such machines are referred to in the following as "vending machines".

The owner of a vending machine or the like which receives payment in the form of credit received from cards needs a way of retrieving that payment from the vending machine. One proposal is that the vending machine should store an accumulated value representing the total credit deducted from the cards in payment for products or services. An operator or serviceman would be provided with means for reading out this accumulated value and storing it in a removable device, preferably a special smart card, the stored accumulated value being reset at the same time. The device can then be presented to a bank in exchange for the value stored therein.

This is a particularly convenient technique, because it uses the same technology as already exists for reading credit data from, and writing credit data to, a smart card. It is necessary in these circumstances, though, to store information which is used to identify those special cards which are used by operators or servicemen in order to retrieve the accumulated credit data, so that this data is only given to authorised people.

One problem exists in that there is a possibility that a special card may be lost or stolen. Its unauthorised use would result in the loss of all the value stored in one or more vending machines, and, possibly, the use of the device which has collected the accumulated credit in other vending machines for obtaining products or services.

To deal with this problem, it is necessary to reconfigure each vending machine whenever one of the special cards is lost or stolen, so that all the

relevant vending machines will no longer recognise these as authorised cards and will not transfer the accumulated credit data to those cards. However, reconfiguration is a relatively skilled job, using specialist equipment, and therefore it can take some considerable time until all the machines are reconfigured.

According to one aspect of the invention, a machine for accepting payment by diminishing the value of credit data stored on a card is operable to maintain a record of the accumulated credit value from a plurality of transactions, the machine storing identification data and being operable to use such data to recognise a card as a credit-downloading device, and thereafter to transfer the accumulated value to the credit-downloading device, the information data further including data to enable the machine to recognise a card as a downloading-preventing device, the machine being operable to prevent the downloading of accumulated credit data in response to recognising such a device.

Using these techniques, once a special downloading-card is lost or stolen, the owner of the vending machines can immediately issue a serviceman with a downloading-preventing card, i.e. a card with a predetermined identification number, and the serviceman can then visit the vending machines and prevent unauthorised downloading of data simply by inserting this card. This special downloading-preventing device will be referred to herein for convenience as a "stop card". Preferably, it is read using



the same card reader as is used for ordinary transactions, which is also preferably used for transferring accumulated data to the special downloading cards.

5 The inhibiting of downloading can take place by setting a flag within the machine, which is checked prior to each downloading operation. Alternatively, or additionally, this could be done by clearing the identifying-information used to identify the downloading cards, and/or by altering flags associated with the identification information.

10 It is envisaged that the use of the stop card for inhibiting downloading can be carried out quickly, easily and inexpensively. The machines can thereafter be reconfigured at a convenient timing, without worrying about unauthorised downloading of credit data.

15 A further problem for owners of vending machines of the type generally described above is the fact that, in order to perform testing, a serviceman generally has to be provided with a card storing a significant amount of value so that he can repeatedly initiate vending operations for testing purposes. These cards are therefore intrinsically valuable, and are open to misuse and represent a significant loss if stolen.

20 According to another aspect of the invention, there is provided a transaction machine which is operable to accept payment in the form of credit value transferred from a card, the machine storing information to enable it to recognise a special test card, and being operable in response to recognising

such a card to vend a product or perform a service without requiring payment from the test card. The machine can either deduct the payment value from the test card prior to vending the product or performing the service, and then refund the value, or can vend a product or perform a service without deducting credit data from the card. The former is preferred, because it tests more of the conventional operations of the machine.

According to this aspect of the invention, the test card need not have any stored credit data and thus would have no intrinsic value, or if it does store credit data this can be limited to the value required for a single transaction. Furthermore, the "free vending" operation would be allowed only in those machines which store the appropriate identification data. Accordingly, the consequences of misuse or loss of the test card are substantially reduced.

If desired, the "free vending" operation can take place only after the serviceman has switched the machine into a test mode, for example using a key. Additionally, or alternatively, the machine can be arranged to store an indication of how many free vends have been provided.

An arrangement embodying the invention will now be described by way of example with reference to the accompanying drawings, in which:

Figure 1 shows schematically a vending machine in accordance with the invention;

Figure 2 illustrates the contents of a memory storing registration information; and

Figure 3 is a flowchart of the operation of the machine.

Referring to Figure 1, a vending machine 2 has a product vending section 4, a card reader 6, a control unit 8 and an input/output unit 10 comprising a display and a keyboard. A customer inserts a smart card such as that shown at 12 into the card reader 6. The card reader 6 then reads the credit value from the card 12 and the control unit 8 causes this to be displayed on the display of the unit 10. The customer can then operate the keypad of the unit 10 in order to select a product for vending. Before the product is vended, the value stored on the card 12 is cancelled and an amount corresponding to the initial value minus the value of the vend is written onto the card 12.

The machine 2 stores an accumulated credit value corresponding to the total amount deducted from the cards inserted into the machine. In the present embodiment this is achieved using an interface unit 14 in the form of a second card reader, and an internal smart card 16. Each time a value is deducted from an inserted card 12, that value is added to the credit stored on the internal card 16.

When an operator wishes to retrieve the payment made by the customers using the machine, a special downloading card 18 is inserted into the card reader 6. This special card is recognised by the control unit 8, which then causes the amount stored on the internal card 16 to be added to the

amount currently stored on the downloading card 18, and the amount stored on the card 16 to be reduced to zero. The downloading card 18 can then be taken away and ultimately handed into a bank in exchange for the amount stored thereon.

5           In the event that a downloading card 18 is lost or stolen, a serviceman is given a special stop card 20 which he takes to each of a number of vending machines in turn, and inserts it into the card reader 6 of each machine. This is recognised by the unit 8, and is used to disable the downloading function of the machine. The control unit 8 has a memory 22, the contents of which are  
10           illustrated schematically in Figure 2. The memory stores a plurality of identification numbers indicated at 24 and, associated with each identification number, a flag 26. Whenever a card is inserted either into the card reader 6 or the interface unit 14, this memory is checked to determine whether an identification number stored by the card matches any of those in the memory  
15           22. If so, then the machine takes appropriate action depending upon the flag 26 associated with that card.

          In particular, the unit 8 will only accept as valid a card 16 which has associated therewith a flag indicating that it is valid for internal use (such flags being indicated as "I" in Figure 2).

20           If a serviceman wishes to test the apparatus, he can do this using a special test card 28 which is inserted into the card reader 6. Preferably, prior to the testing operation, the serviceman unlocks a cabinet of the vending

machine and operates a switch 30 (which may be operated automatically by the unlocking and/or opening of the cabinet). Upon insertion of the card 28, the unit 8 reduces the value on the card 28 and adds it to that on the card 16, as usual, and permits a vend. However, following the vend, the value is then  
5 taken off the internal card 16 and added to that stored on the test card 28, so that the original value is restored. The value is thus held in escrow during the transaction by the internal card 16.

Referring to Figure 3, the control unit 8 operates as follows upon insertion of a card in the card reader 6.

10 After the start operation 300, the unit tests that the card is valid at step 302, and at the same time reads its identification number. Assuming that the card is valid, the program proceeds to step 304 to check whether the identification number is stored in the memory 22. If not, a conventional vend operation, including reading of the credit data, re-writing of reduced credit  
15 data and vending of a product, takes place at step 306.

If the identification number is recognised, the program proceeds to step 308 to test whether the flag 26 associated with the identification number is "D" representing a downloading card 18. If so, a downloading operation takes place at step 310, resulting in the credit on the card 16 being reduced to  
20 zero, and that on the card 18 being increased correspondingly.

If the identification flag 26 is not "D", the program proceeds to step 312 to check whether it is "S", corresponding to a stop card 20. If so, the

program proceeds to step 314, where the control unit 8 alters all the flags "D" to some other value, e.g. "X". Alternatively, the unit 8 clears the contents of all memory locations 24 corresponding with flags "D". Either operation would ensure that future insertion of any downloading cards will be ineffective. As a  
5 further alternative, an internal flag within the program routine could be altered so that steps 308 and 310 (or just 310) are omitted in future executions of the program.

If, at step 312, the flag is not recognised to be "S", the program proceeds to step 316. Here, the unit 8 checks whether the flag corresponds to  
10 "T", indicating a test card 28. If so, the program proceeds to a vend operation 318, corresponding to the vend operation 306 described above. Following that vend operation, at step 320, the amount deducted from the card during step 318 is refunded, as described above.

If desired, the program could check that the switch 30 has been  
15 operated (indicating that the machine has been switched to a test mode) and perform steps 318 and 320 (or step 320) only if this condition is detected.

The program routine terminates at step 322 if the card is found invalid (at step 302), after a vending operation (at step 306), after the appropriate operation following detection of a flag "D", "S" or "T", or if no valid flag is  
20 detected.

If a stop card 20 has been used, then an appropriately authorised serviceman can, at a later date, restore the downloading option by, e.g.,

connecting to the machine a computer or hand-held terminal. This will restore any flags altered by the routine 314, but erase identification information relating to the stolen or lost downloading card. To facilitate this operation, and avoid the need for the computer or terminal to store all the identifying information for other authorised downloading cards, it is preferred that step 5 314 should not erase this identifying information.

If desired, the test card 28 can store an expiry date, and the machine can be arranged to allow a "free vend" only after checking that this expiry date has not been passed. Additionally or alternatively, the card may store a number which represents the number of permitted "free vends" and which is 10 checked by the machine, and altered each time a "free vend" occurs.

## CLAIMS:

1. A machine for use in transactions, the machine being operable to accept payment by diminishing the value of credit data stored on a card, the machine being operable to maintain a record of the accumulated value of the payments made, and having a memory storing identification data, the machine being operable to use the stored data to recognise a card as a card authorised for the purposes of downloading, and in response thereto to transfer the accumulated value to the card;

characterised in that the machine is further operable to use the identification information to recognise that a card is authorised for the purpose of inhibiting downloading, and in response thereto to prevent transfer of accumulated values to cards authorised for downloading.

2. A machine as claimed in claim 1, wherein the machine is operable to check data identifying a card against stored identifying data representing a plurality of cards and, if a match is found, to permit downloading if a flag associated with the matching identifying data indicates that the card is authorised for downloading, and wherein the machine is operable, in response to recognising a card as being authorised for inhibiting downloading, to alter the flags associated with the data identifying cards authorised for downloading.



3. A machine as claimed in claim 1, wherein the machine is operable, in response to recognising a card as being authorised for inhibiting downloading, to reset the memory locations containing data identifying cards authorised for downloading.

5

4. A machine as claimed in any preceding claim, wherein the machine is operable, in response to identifying a card as being authorised for inhibiting downloading, to set a flag so that future transfer of accumulated values to a card authorised for downloading is inhibited irrespective of whether or not the memory stores data identifying that card as authorised for downloading.

10

5. A machine as claimed in any preceding claim, wherein the machine is further operable to use the identification data to recognise a card as authorised for use as a test card, and in response thereto to allow an operation normally performed by the machine in exchange for payment to be carried out without requiring a resultant loss in the credit stored on the test card.

15

6. A machine for use in performing transactions, the machine being operable to accept payment by reducing the value of credit data stored on a card, the machine storing identification data and being operable to use the identification data to recognise a received card as being authorised for test

20

purposes, and in response thereto to permit an operation normally requiring payment to be carried out by the machine without a resultant reduction in the credit data stored by the test card.

5           7.     A machine as claimed in claim 5 or 6, wherein the machine is operable in response to recognising that a card is authorised for test purposes to reduce the credit value stored on the card as payment, and then to restore the credit value.

10           8.     A machine as claimed in claim 5, 6 or 7, wherein the machine is arranged to enable said operation without requiring a resultant loss in the credit on the card only if the machine is first switched into a test mode.

15           9.     A machine substantially as herein described with reference to the accompanying drawings.

20           10.    A method of operating a vending machine which is operable to accept payment by diminishing the value of credit data stored on a card, and which is further operable to recognise a card as being authorised for the purposes of downloading and in response thereto to transfer to the card a record of the accumulated value of payments made, the method comprising causing the machine to read a card storing data identifying the card as being

authorised for the purpose of inhibiting downloading, the machine thereafter being inoperable for performing the downloading operation.

11. A method of operating a machine which is operable to accept  
5 payment by reducing the value of credit data stored on a card, the method comprising the step of testing the machine by causing the machine to read a card storing data identifying the card as being authorised for test purposes, the machine responding thereto by permitting an operation normally requiring  
10 payment to be carried out by the machine without a resultant reduction in the credit data stored by the test card.

1/1

FIG. 1

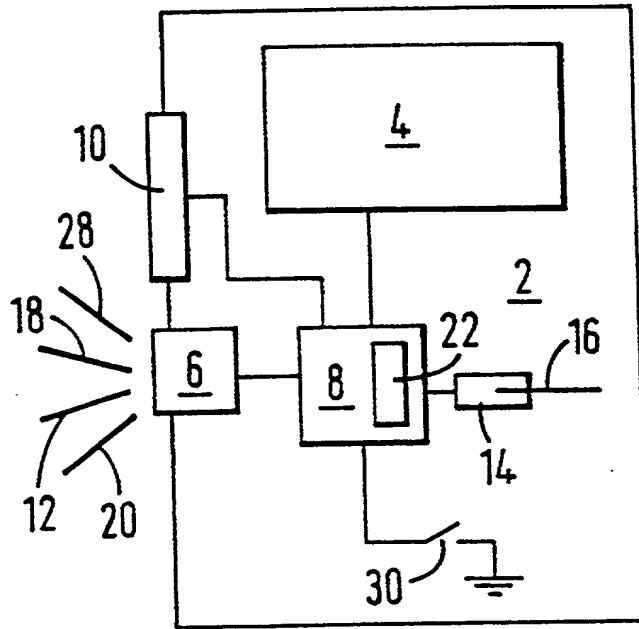
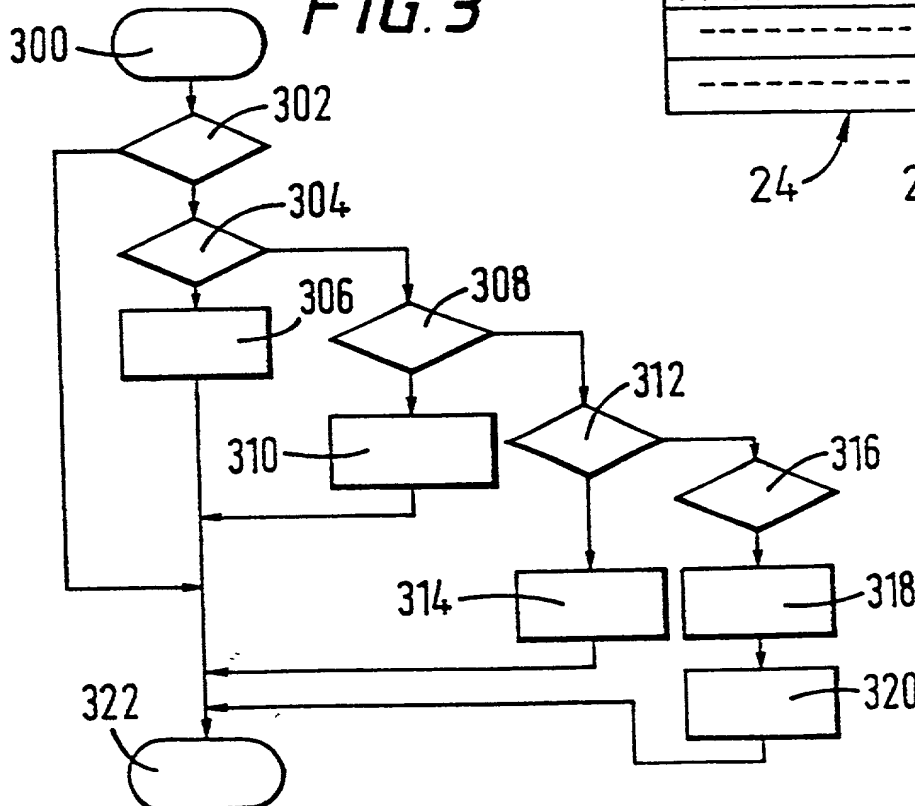


FIG. 2

1	0	9	4	5	6	9	S
X	X	X	X	X			S
-----							-
-----							-
7	6	8	3	4	2	8	D
X	X	X	X	X			D
-----							-
-----							-
5	6	9	2	0	1	4	I
X	X	X	X	X			I
-----							-
-----							-
2	9	0	7	6	4	3	T
X	X	X	X	X			T
-----							-
-----							-

FIG. 3



## COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled METHOD AND APPARATUS FOR PERFORMING TRANSACTIONS, the specification of which:

- ☒ is attached hereto.  
☐ was filed on \_ as Application Serial No. \_ and was amended on \_\_\_\_\_.  
☐ was described and claimed in PCT International Application No. \_\_\_\_\_ filed on \_\_\_\_\_ and as amended under PCT Article 19 on \_\_\_\_\_.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose all information I know to be material to patentability in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

Country	Application No.	Filing Date	Priority Claimed
PCT	PCT/IB98/01323	08/04/1998	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
United Kingdom	9716490.9	08/04/1997	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

I hereby appoint the following attorneys and/or agents to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: Stephan J. Filipek, Reg. No. 33,384; John B. Pegram, Reg. No. 25,198; William J. Hone, Reg. No. 26,739; Frederick H. Rabin, Reg. No. 24,488; Richard P. Ferrara, Reg. No. 30,632; Samuel Borodach, Reg. No. 38,388; Andrew T. D'Amico, Reg. No. 33,375; and Andrew N. Parfomak, Reg. No. 32,431.

Address all telephone calls to STEPHAN J. FILIPEK at telephone number (212) 765-5070.

Address all correspondence to STEPHAN J. FILIPEK at:

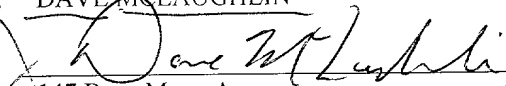
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patents issued thereon.

**Combined Declaration and Power of Attorney**

Page 2 of 2 Pages

1-00  
Full Name of Inventor: DAVE MCLAUGHLIN

Inventor's Signature: 

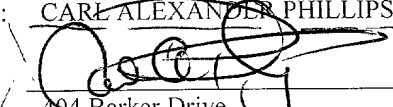
Date: 1/21/00

Residence Address: 147 Bryn-Mawr Avenue  
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PHOENIXVILLE, PA 19360

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